

REMARKS

This is in response to the Non-Final Office Action of August 19, 2008. By this Amendment, claims 1-3, 10, 11, 13, 16 and 19 have been amended, and claim 20 has been added. Claims 5, 8, 9, 12, 14, 15, 17 and 18 have been cancelled. Thus, claims 1-4, 6, 7, 10, 11, 13, 16, 19 and 20 are in the application for examination. Claims 1 and 19 are in independent form.

Filed separately herewith is a Petition for a three-month extension of time, along with payment authorization (Form PTO-2038) to cover the requisite fee. The Commissioner is also authorized to charge payment of any other additional fees associated with this communication or credit any overpayment to Deposit Account No. 06-1358.

In the Office Action (¶3), the Examiner objected to Figure 8 of the drawings because it referred to reference numeral 62 which was not mentioned in the written description. A new sheet of drawings comprising Figure 8 with the reference numeral 62 deleted is submitted herewith.

In the Office Action (¶4), the Examiner also objected to the drawings for failing to show every feature of the invention specified in the claims. It appears that the Examiner objected to the microfluidic system/module/devices as not being shown, albeit the objection is unclear. In any event, several claims have now been cancelled and it is respectfully submitted that the cancellation of such claims would fully obviate the objection to the drawings. Quite clearly, the drawings depict the modular microfluidic devices as shown in, for example, Figure 2 (which shows the module) and Figure 3 (which shows microfluidic modules 35, 36 and 37). Thus, it is believed that, with the cancellation of dependent claims, the objection to the drawings has now been overcome.

In the Office Action, the Examiner objected to the Information Disclosure Statement because it referred to a patent document that was not in the English language. The Examiner stated a concise

explanation of its relevance is required. However, a concise explanation of its relevance has been submitted because it was discussed in the International Preliminary Examination Report (“IPER”) filed with the application. For completeness, a copy of the IPER is attached. It is noted that the relevance of the German reference to the present invention is clearly set forth on page 3 of the IPER. Thus, the Examiner must acknowledge in the next Office Action that the German reference has been considered.

Turning to the claim amendments, claim 1 has now been amended to recite that the fluid coupling comprises an insertable ferrule that is resilient at least in the region of the fluid-tight connection. This is clearly supported in the patent specification at page 7, lines 15-21. The dependent claims have further been amended. New claim 20 has support in the specification at page 14, beginning at line 23.

In the Office Action, claim 1, and various dependent claims, were rejected as anticipated by the Cherukuri et al. U.S. Patent No. 6,331,439. Reconsideration is respectfully requested. Claim 1 recites the fluid coupling comprising a ferrule insertable into a suitably shaped recess. A ferrule is a “tubular element” as is set forth at page 8, the paragraph beginning at line 24. And, the Examiner acknowledges that Cherukuri et al. fails to disclose a rigid tubular element. See Office Action, ¶17. Indeed, Cherukuri et al. fails to disclose any tubular element and thus fails to disclose the ferrule as is now claimed. Thus, the rejection of claim 1 for anticipation, as well as those claims dependent therefrom, must be withdrawn.

In the Office Action, the Examiner rejected dependent claims 2 and 3 which recited the channel means as comprising a rigid tubular element (original claim 2), wherein the tubular element is a projecting ferrule (original claim 3). Claim 2 was rejected as obvious over Cherukuri et al., in view

of Berndt U.S. Patent No. 6,919,045; claim 3 was rejected as further obvious over Benett U.S. Patent No. 6,209,928. Reconsideration is respectfully requested. It would not be obvious to combine the three references in the manner as suggested.

The Berndt patent relates to the combination of a microfluidic chip/module and a supply element. Figure 4a2 of this patent shows the supply element of this combination. The supply element includes supply lines or reservoirs 74 and 75, and contacts 78 and 76. Contacts 78 and 76 are electrodes, and the patent does not indicate that they are insertable ferrules or that they are resilient at least at the point of connection. A person skilled in the art could not or would not arrive at the invention as now claimed in claim 1 by combining Cherukuri and Berndt, even if there was a clear motivation to do so, since Berndt does not teach insertable ferrules that provide fluid-tight connection by being resilient. It is therefore maintained that claim 1 as amended is both novel and non-obvious over both of these citations.

The Benett patent teaches a miniature connector for microfluidic devices. This connector is analogous to the HPLC fitting 12 of Figure 1. The connector taught by this document comprises a stiff tubing 14 with a machined tip 17 that is inserted into a drilled input port 11 of a microfluidic device 10. There is a tight tolerance between the machined tubing tip and the opening 11 and the tip 17 includes a notch 18 for accepting a small o-ring 19. It is the compression of this o-ring that provides a leak-tight seal around the tubing tip. Such a feature is not required with the claimed invention, and a reader of Benett or Berndt or Cherukuri is provided with no motivation to remove this feature, since to do so would destroy the connectors 'leak-tight seal'. Furthermore, it is clear from Figure 1 of Benett that the other end of the tubing 14 cannot be inserted into a corresponding recess of another microfluidic device in the manner of the claimed ferrule; in Benett, the other end of the tube

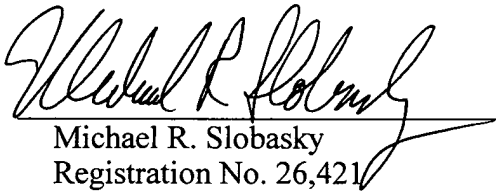
is held in place by a knurled compression screw 23. Thus, the amended claim 1 is both novel and non-obvious over Benett in combination with the other two cited references.

Remaining claims 16 and 19 were further rejected as obvious in combination with the Jovanovich reference 2001/0007641 and the Strand reference 2002/0176804. However, the basic combination of Cherukuri et al. and Benett cannot be maintained as discussed above and, therefore, these claims are also patentable.

Thus, this application is now in condition for allowance. If the Examiner should have any questions after reviewing this Amendment, the Examiner is cordially invited to telephone the undersigned attorneys.

Respectfully submitted,

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